

Title (en)
Channel estimation in an OFDM system

Title (de)
Kanalschätzung in einem OFDM System

Title (fr)
Estimation de canal pour un système de multiplexage par répartition orthogonale de la fréquence (OFDM)

Publication
EP 2259517 A2 20101208 (EN)

Application
EP 10163949 A 20100526

Priority
GB 0909627 A 20090603

Abstract (en)
According to one aspect of the present invention there is provided a receiver for receiving OFDM symbols transmitted via a channel, the OFDM symbols comprising a plurality of data bearing sub-carriers on which data is transmitted and a plurality of pilot bearing sub-carriers on which pilot data is transmitted, the pilot sub-carriers being distributed throughout each OFDM symbol. The receiver comprises a pilot data extractor for extracting pilot data from the pilot sub-carriers of each OFDM symbol and a channel estimator operable to generate a frequency domain channel estimate of the channel. The receiver is operable to equalise each received OFDM symbol by substantially cancelling the effects of the channel according to the channel estimate produced by the channel estimator to increase a likelihood of correctly recovering data conveyed by the OFDM symbol. The channel estimator comprises a channel estimate vector generator arranged to generate a channel estimate vector comprising a plurality of samples, a spacing and value of the samples corresponding to the spacing and values of the pilot data extracted from the pilot sub-carriers, and a filter cascade arranged to receive as an input the channel estimate vector and operable to produce the channel estimate by interpolating between the samples of the channel estimate vector to produce an up-sampled version of the channel estimate vector corresponding to the channel estimate of the channel response of the channel at each sub-carrier position of the OFDM symbol.

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CPC (source: EP GB)
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Cited by
CN103944841A; CN104519004A; CN107750438A; AU2016292951B2; CN114710383A; EP2503749A3; US8761314B2; US9143365B2; WO2017008121A1; US11804999B2; US10516449B2; US11374804B2; US8462895B2; US8971465B2; US8982987B2

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